

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

A2
1. (Currently amended) ~~A disk array system having at least one computer and a disk array apparatus to be used by the computer, the disk array apparatus having a plurality of disk apparatuses and a plurality of controllers each having a dedicated cache, wherein:~~ A system for storing data, comprising:

at least one computer; and

a disk array apparatus to be used by said at least one computer, said disk array apparatus including:

a plurality of disks,

a first controller, and

a second controller, wherein said first controller has a first exclusive cache and said second controller has a second exclusive cache, and wherein said first controller and said second controller are coupled to said plurality of disks,

~~said controller comprises configuration management means for managing configuration information of logical units formed for the disk apparatus, said configuration management means rewrites the configuration information of the logical units in accordance with control information to perform a take-over process of switching a desired logical unit of units under control of one controller to another desired controller or controllers.~~

wherein said first controller controls a plurality of first logical units in said plurality of disks and manages first configuration information of said plurality of first logical units,

wherein said second controller controls a plurality of second logical units in said plurality of disks and manages second configuration information of said plurality of second logical units, and

wherein said first controller takes over control of one of said plurality of first logical units from said first controller to said second controller by rewriting said first configuration information associated with said one of said plurality of first logical units.

2-14. (Canceled).

A2
15. (New) A system according to claim 1, further comprising:

a management apparatus being coupled with said at least one computer and said disk array apparatus, wherein said management apparatus designates a first logical unit number and said second controller to said disk array apparatus, wherein said first logical unit number corresponds to said one of said plurality of first logical units, and

wherein said first controller takes over control of said one of said plurality of first logical units designated by said management apparatus to said second controller designated by said management apparatus.

16. (New) A system according to claim 1, wherein after said first controller writes data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks, said first controller takes over control of said one of said plurality of first logical units to said second controller.

17. (New) A system according to claim 16, further comprising:

a management apparatus being coupled with said at least one computer and said disk array apparatus, wherein said first controller writes said data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks in response to a write instruction from said management apparatus.

18. (New) A system according to claim 17, further comprising:

a path controller being coupled with said at least one computer and said disk array apparatus, wherein after said first controller writes said data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks, said management apparatus directs a path change to said path controller, and said path controller changes a path for accessing said one of said plurality of first logical units from a first path between said path controller and said first controller, into a second path between said path controller and said second controller.

A2
19. (New) A system according to claim 1, further comprising:
a backup apparatus being coupled with said at least one computer, wherein
after said first controller takes over control of said one of said plurality of first logical units to
said second controller, said at least one computer stores data of said one of said plurality of
first logical units in said backup apparatus via said second controller.

20. (New) A system according to claim 19,
wherein said one of said plurality of first logical units stores copy data of
another one of said plurality of first logical units,
wherein when said disk array apparatus receives a split instruction from said at
least one computer, said first controller stops storing said copy data of said another one of
said plurality of first logical units in said one of said plurality of first logical units, and
wherein after said first controller takes over control of said one of said
plurality of first logical units to said second controller, said at least one computer stores said
data of said one of said plurality of first logical units in said backup device via said second
controller.

21. (New) A method of controlling a disk array apparatus coupled with at
least one computer, wherein said disk array apparatus comprises a plurality of disks, a first
controller and a second controller, and wherein said first controller has a first exclusive cache
and said second controller has a second exclusive cache, said method comprising the steps of:
controlling, with said first controller, a plurality of first logical units in said
plurality of disks and managing first configuration information of said plurality of first
logical units;
controlling, with said second controller, a plurality of second logical units in
said plurality of disks and managing second configuration information of said plurality of
second logical units; and
taking over control of one of said plurality of first logical units, by said first
controller from said first controller to said second controller, by rewriting said first
configuration information associated with said one of said plurality of first logical units.

22. (New) The method of claim 21, further comprising:

A2
designating, by a management apparatus being coupled with said at least one computer and said disk array apparatus, a first logical unit number and said second controller to said disk array apparatus, wherein said first logical unit number corresponds to said one of said plurality of first logical units; and

taking over control of said one of said plurality of first logical units designated by said management apparatus to said second controller designated by said management apparatus.

23. (New) The method of claim 21, wherein after said first controller writes data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks, said first controller takes over control of said one of said plurality of first logical units to said second controller.

24. (New) The method of claim 23, further comprising:

generating, by a management apparatus being coupled with said at least one computer and said disk array apparatus, a write instruction; and

writing, by said first controller, said data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks in response to said write instruction.

25. (New) The method of claim 24, further comprising:

directing, by said management apparatus, a path change to a path controller being coupled with said at least one computer and said disk array apparatus, after said first controller writes said data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks; and

changing, by said path controller, a path for accessing said one of said plurality of first logical units from a first path between said path controller and said first controller, into a second path between said path controller and said second controller.

26. (New) The method of claim 21, further comprising:

A2 storing, by said at least one computer via said second controller, data of said one of said plurality of first logical units in a backup apparatus being coupled with said at least one computer, after said first controller takes over control of said one of said plurality of first logical units to said second controller.

27. (New) The method of claim 26,

wherein said one of said plurality of first logical units stores copy data of another one of said plurality of first logical units,

wherein when said disk array apparatus receives a split instruction from said at least one computer, said first controller stops storing said copy data of said another one of said plurality of first logical units in said one of said plurality of first logical units, and

wherein after said first controller takes over control of said one of said plurality of first logical units to said second controller, said at least one computer stores said data of said one of said plurality of first logical units in said backup device via said second controller.

28. (New) A disk array apparatus to be used by at least one computer, said disk array apparatus comprising:

a plurality of disks,

a first controller, and

a second controller, wherein said first controller has a first exclusive cache and said second controller has a second exclusive cache, and wherein said first controller and said second controller are coupled to said plurality of disks,

wherein said first controller controls a plurality of first logical units in said plurality of disks and manages first configuration information of said plurality of first logical units,

wherein said second controller controls a plurality of second logical units in said plurality of disks and manages second configuration information of said plurality of second logical units, and

wherein said first controller takes over control of one of said plurality of first logical units from said first controller to said second controller by rewriting said first configuration information associated with said one of said plurality of first logical units.

A2
29. (New) A disk array apparatus according to claim 28,

wherein a management apparatus designates a first logical unit number and said second controller to said disk array apparatus, wherein said first logical unit number corresponds to said one of said plurality of first logical units, and

wherein said first controller takes over control of said one of said plurality of first logical units designated by said management apparatus to said second controller designated by said management apparatus.

30. (New) A disk array apparatus according to claim 28, wherein after said first controller writes data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks, said first controller takes over control of said one of said plurality of first logical units to said second controller.

31. (New) A disk array apparatus according to claim 30, wherein said first controller writes said data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks in response to a write instruction from a management apparatus.

32. (New) A disk array apparatus according to claim 31, wherein after said first controller writes said data of said one of said plurality of first logical units, stored in said first exclusive cache, onto said plurality of disks, said management apparatus directs a path change to a path controller, and said path controller changes a path for accessing said one of said plurality of first logical units from a first path between said path controller and said first controller, into a second path between said path controller and said second controller.

33. (New) A disk array apparatus according to claim 28, wherein after said first controller takes over control of said one of said plurality of first logical units to said second controller, said at least one computer stores data of said one of said plurality of first logical units in a backup apparatus via said second controller.

34. (New) A disk array apparatus according to claim 33,
wherein said one of said plurality of first logical units stores copy data of another one of said plurality of first logical units,
wherein when said disk array apparatus receives a split instruction from said at least one computer, said first controller stops storing said copy data of said another one of said plurality of first logical units in said one of said plurality of first logical units, and
wherein after said first controller takes over control of said one of said plurality of first logical units to said second controller, said at least one computer stores said data of said one of said plurality of first logical units in said backup device via said second controller.